

**PROGRESS REPORT OF
WOLF POPULATION MONITORING
IN WISCONSIN
FOR THE PERIOD
APRIL – SEPTEMBER 2004
& ANNUAL SUMMARIES FOR 2004**

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ABSTRACT

Thirty-one wolves were live-captured in Wisconsin and collars were placed on 22 in 2004. At least 108 packs occurred in the state in spring 2004. A total of 52 radio collared wolves were monitored by the Wisconsin DNR during the spring-summer 2004 study period. Six wolves died, signals were lost on 2, and 1 wolf dispersed to Michigan. Dispersal moves were detected or suspected in 16 wolves, and 1 Michigan wolf dispersed over 290 miles into Northwest Wisconsin. Wolf pups were detected in 26 of 47 packs through howl surveys. Reports of wolf observations were received from 33 Wisconsin counties. A total of 66 wolves were found dead in Wisconsin; depredation control activities, vehicle collisions, illegal kill and mange were the most important causes of mortality; illegal kill seems to have declined in the last 2 years. Wolf depredation occurred on 22 farms and 27 wolves were captured on 12 farms. Wolf kills included 27 cattle, 5 sheep, 6 deer (deer farm), 15 dogs, plus 3 dogs injured.

INTRODUCTION

Wolves recolonized Wisconsin in the mid 1970's after an absence of about 15 years (Wydeven et al 1995). The Wisconsin Department of Natural Resources (DNR) has monitored wolves since 1979, and population monitoring efforts were reinforced in the 1989 recovery plan (Wisconsin DNR 1989), and the 1999 wolf management plan (Wisconsin DNR 1999). Monitoring in spring and summer consisted of live trapping, radio collaring, radio tracking and howl surveys. Winter monitoring includes snow tracking of wolves, radio tracking of collared wolves, and estimations of the state wolf population (Wisconsin DNR 1999). Surveys from winter 2003-2004 indicated a state wolf population of 373 -410 wolves, and 361 -398 wolves outside of Indian Reservations (Wydeven et al. 2003). This represented the first year the wolf population achieved its management goal of 350 wolves outside of Indian reservations. This was the third year with more than 250 wolves outside Indian Reservations, the state delisting goal. State delisting was completed on August 1, 2004, and wolves were listed as Protected Wild Animals at that time.

The U.S. Fish and Wildlife Service down listed wolves in Wisconsin from federally endangered to threatened on 1 April 2003 (Federal Register Vol. 68, # 62). Therefore, authority was provided the state of Wisconsin and tribes to use lethal control on problem wolves. The federal delisting process was begun in July 2004, hearings were held in Wisconsin in September, and public comments were collected until November 18, 2004. If the delisting process is not overturned by legal challenges, potential federal delisting could be completed in summer 2005, returning all management to the State of Wisconsin.

The current report covers wolf population monitoring activity from April through September 2004, as well as annual summaries for depredation, mortalities, and total captures in 2004.

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Many people assisted with wolf population monitoring in Wisconsin. DNR pilots who tracked collared wolves included Phil Miller, John Bronson, Joe Sprenger, Mike Weinfurter, Paul Anderson and Dan Cardinal. Dick Thiel, with help from Ellen Heilhecker, and staff at Sandhill Wildlife Area monitored wolves in central Wisconsin. Jason Hawley of Central Michigan University studied wolf reactions to dog shock collars as a means for depredation reduction with Dr. Thomas Gehring and Shawn Rossler. Jane Wiedenhoeft coordinated data analysis and summarized survey information. Kerry Beheler, Dr. Julie Langenberg and Nancy Businga coordinated health monitoring of wolves and conducted necropsies on non-collared wolves. Randy Jurewicz coordinated transport of wolf carcasses and wolf depredation payments. Ron Schultz, Buck Follis, Adrian Wydeven, Todd Naas, and Greg Kessler conducted wolf trapping in northern Wisconsin with the help of Darby Murphy, Tom Matthiae, Dan Eklund, Geoff Chandler, Sarah Harvey, Nancy Warren, Kerry Martin, Steven Burns, Dave Saunter, Trent Leaf, Travis Nebling, Seth Lanning, Pam Troxell, Mike Zeckmeister, Caleb Bilda, Alex Fosado, Andy Crosby, and Ron VanderVelden. Radio-collared wolves found dead in the field were examined at the National Wildlife Health Center in Madison by Dr. Nancy Thomas, Dr. Valerie Bochslers, Dr. Kathryn Coyle, Dr. Louis Sileo and coordinated through Dr. Grace McLaughlin. Dr. Dorothy Ginnett conducted research on heartworm in wolves. USDA-Wildlife Service persons were involved in investigating wolf depredation, providing advice to owners of domestic animals, and trapping problem wolves under the direction of Bob Willging (northern Wisconsin) and Chip Lovell (southern and central Wisconsin), and included Barry Benson, Phil Peterson, Jim Rollman, Ed Zydzik, Eric Fromm, Kelly Thiel, Dave Ruid, Dan Hirschert, Jeremy Irish, Jim Miller, Mike Haen, and DeWayne Snobl. Others assisting included Cindy Mueller, Chris Giese, Lance Burns, Mark DiSalvo, Dave Oginski, Norm Poulton, Scott Pearson, Sarah Boles, Chris Schultz and others.

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METHODS

Wolves were live trapped and radio collared following procedures of Mech (1974) and Wydeven et al. (1995). Most trapping was done from early May through mid-September mostly using foothold traps (Kuehn et al. 1986), but some limited trapping was done with cable restraints in winter, summer and fall (Olson and Tischafer, 2004).

Jason Hawley and Tom Gehring conducted research on potential use of shock collars to deter wolves from specific areas. They placed shock collars on 4 different wolves in 3 packs that were also fitted with radio collars. Two of these were fitted with GPS collars, and the other 2 received traditional VHF collars. Radio collared wolves with shock collars were contrasted with collared wolves that did not have shock collars. Sites were established in shock collared and non-shock collared packs using road killed deer to attract wolves to the sites. Shock collars with remote triggering devices were used to deter wolves from these sites during portions of the study. Details of methods and results of this study will be reported elsewhere.

Home range area for the summer period (15 April – 14 September) was determined from the minimum convex polygon (Mohr 1947). Isolated radio locations over 5 km from other points were considered extra-territorial moves as done by Fuller (1989). When 2 separate clusters of radiolocations existed with regular travel between them, areas in between were considered part of the home range regardless of distance, as long as both clusters did not occur in another pack territory. Home range areas were calculated for wolves that occupied stable areas, and did not include wolves that were dispersing.

Howl surveys (Harrington and Mech 1982) were used to determine pup production, location of rendezvous sites, summer location of non-collared packs, and to determine the presence of new packs. Howl surveys are useful for determining occurrence of wolves and presence of pups, but are not reliable for an accurate count of wolves beyond 2-3+ pups and 2-3+ adults (Harrington and Mech 1982).

RESULTS AND DISCUSSION

Thirty-one wolves were live captured and 30 were released back into the wild in 2004 (Table1). Collars were placed on 22 wolves captured in 19 different packs. Twenty-six wolves were captured by DNR and Central Michigan University, 2 were captured by coyote trappers, and 3 were captured by USDA-WS and released at site. USDA-WS also captured and euthanized 24 depredating wolves (See Wolf Mortality and Wolf Depredations below). Live capture of wolves included the following: 9 adult males (ave. wt. 79.3 lbs. S. D. 8.9), 8 adult females (ave. wt. 67.1 lbs., S.D. 9.7), 1 yearling male (60 lbs.), 2 yearling females (both 60 lbs.), 6 pup males (range 31 – 48 lbs.), and 5 female pups (range 31 – 45 lbs.). One adult male died at the time of capture, and was not collared (507M) and one adult male was released without a collar;

all other adults and yearlings were collared. Four pups were fitted with collars (495M, 509F, 484M, and 502M).

Figure 1 illustrates 108 packs of wolves detected in Wisconsin in winter 2003-2004. Wolves 493M (adult male) and 504F (adult female) captured in northern Forest County in summer 2004, were initially thought to be a new pack, but they may have been members of the previously detected Alvin Creek Pack (number 87 on Figure 1). Also depredation was detected by at least 2 packs not detected in winter 2003-2004, including a pack in western Langlade County, and pack in southern Burnett/ northeast Polk County. These packs were undetected in winter surveys, or moved into these areas after winter surveys were completed.

During the spring and summer period of 2004, 52 radio collared wolves were monitored by Wisconsin DNR (Table 2). Wolves were monitored in 39 packs in Wisconsin, one pack in Minnesota, and 3 appeared to be lone dispersers during most of the period. Wolves radio tracked included 36 wolves and 30 packs in Zone 1 (northern Wisconsin); 7 wolves and 5 packs in Zone 2 (central forest); 7 wolves and 4 packs in Zone 3 (central & western Wisconsin); one wolf in Minnesota; and one wolf in Michigan. During the study period, 6 wolves died (468F, 469M, 472F, 426F, 429F, 449M), signals were lost on 2 wolves (G994M, 376F), and 1 wolf dispersed into Michigan (482M). Wolves on the air in early fall included 31 in Zone 1, 5 in Zone 2, 6 in Zone 3, and 1 in Minnesota. Sex and age of wolves monitored in spring/summer 2004 included: 20 adult males, 27 adult females, 1 yearling male, 1 yearling female, and 3 pup males.

The mean home range of 13 adult wolves with 20 or more radio locations was 25 mi² (Table 3). Mean home range of 10 wolves with 20 or more locations was 29.0 mi² for Zone 1 (range 4 –48 mi²), and for 3 wolves in Zone 3 was 10.7 mi² (range 7 to 14). The smallest home range in Zone 1 was an adult female that probably stayed close to her den and rendezvous site in the Bad River Indian Reservation (wolf M036F). It appears that wolves in Zone 3 might occupy smaller home range areas, but all 3 samples were from adult females that tend to occupy smaller home range areas in summer. A male in Zone 3 that was located only 13 times, occupied a home range area of 26 mi², thus more typical of home range areas for Zone 1. No wolves were monitored adequately in Zone 2 to assess home range areas, but 3 monitored for 13 or 14 locations, had home range areas of 4 to 31 mi².

Dispersing Wolves

Wolf G994M, was captured as an adult male in the Ranger Island Pack of Lincoln County on 19 June 2003, but his signal was lost from the pack after 4 February 2004. He was detected on 27 July 2004 west of Antigo, 32 miles to the southeast before his signal was again lost.

Wolf M726M, was captured as an adult male in Gogebic County, Michigan on 11 May 2003, but lost after 22 May 2003. By 4 June 2004 he had moved into the Augustine Lake and East Firelane area of Ashland County, 36 miles to the southeast. Wolf M726M remained in the East Firelane area throughout the remainder of the summer.

Wolf M4914M was captured in Mackinac County Michigan as an adult male on 18 October 2003, and he was monitored in eastern Schoolcraft County until 25 March 2004. He was killed by vehicle in Rusk County, Wisconsin on 8 May 2004, 270 miles west of his last location in Michigan, and 295 miles west of his original capture site.

Wolf M5203M was captured as a yearling male on 1 November 2003, and was last located in Baraga County on 2 December 2003, before having his collar chewed off prior to 15 December 2003. Wolf M5203M was caught as a depredator on 6 August 2004, 194 miles to the southeast in Barron County, Wisconsin. The wolf was euthanized at the depredation site. He may have joined the Blue Hills wolf pack.

Wolf 426F was captured in the Bear Bluff pack of Jackson County as a yearling female on 2 July 2002. In winter 2003-2004 she dispersed, and by 16 February 2004 had settled into the Caves Creek area of northwest Marquette County, Wisconsin, 42 miles to the southeast. Although originally detected with one other wolf, it was not clear whether she formed or joined a new pack. Wolf 426F was killed by vehicle collision in the Caves Creek area on 1 September 2004, but her reproductive tract showed no sign of breeding activity (USGS, National Wildlife Health Center, case no. 19226).

Wolf 446F was captured in the Casey Creek Pack of north Douglas County as an adult female on 13 June 2002. She began to disperse in winter 2003, and occupied 2 home range areas until she occupied the Springbrook area of Washburn County in fall 2003, and remained in that area through summer 2004. After 13 July 2004, she shifted her home range 4 miles north to the Tranus Lake area. This new home range is about 36 miles south of her original territory.

Wolf 454F was captured as an adult female at a depredation site on 19 July 2002, and was released into the Menominee Indian reservation in September 2002 with her mate and 5 pups. The group became known as the Oconto River pack, and settled into western Oconto and eastern Menominee County. Her mate died in fall 2002, and in February 2003, she began making long distance moves from the Oconto River area. During winter and spring 2004, 454F was mostly in the Oconto River area, but made at least 2 long distance moves. After 22 June 2004, 454 moved 32 miles west to occupy a home range area in western Shawano County. During the rest of summer she occupied a 10 mi.² area near Birnamwood.

Wolf 474M was captured as an adult male in the Dunbar Pack of northern Marinette County on 19 May 2003. In winter 2004 he began to disperse southward, and by early April he had moved to eastern Menominee County, Wisconsin 49 miles to the south. He continued moving to the southwest through Shawano, Waupaca, and into northern Portage County. He spent the remainder of the summer living in northern Portage County 92 miles southwest of his original territory, and it seemed that Highway 51 (I-39) blocked the wolf from any further west movements.

Wolf 479M was captured as a male pup in the Ranger Island Pack of Lincoln County on 23 August 2003. He left his home territory after 22 March 2004, and by summer seemed to have joined the Kidrick Swamp Pack 40 miles to the southwest. In late July he again moved westward and his last signal during the monitoring period was in western Taylor County on 27 July 2004, 52 miles southwest of his original home.

Wolf 481M was captured as an adult male in the Murray's Landing pack of Iron County on 7 July 2003. After 25 February 2004, he dispersed and by 22 April he had occupied the Musser Creek area of Price County, 25 miles to the south. He occupied a 25 mi.² home range in the Musser Creek area throughout the summer.

Wolf 482M was captured as an adult male in the North Willow Pack of Oneida County on 10 June 2003, but was lost from this territory after 14 November 2003. He was detected 37 miles to the northeast in Gogebic County, Michigan on 2 June 2004. His monitoring was turned over to Michigan DNR at that time.

Wolf Juneau County Female, an adult was killed along I-94 in Juneau County, about 9 miles south of the nearest wolf pack in the Necedah National Wildlife Refuge.

Wolf Marathon County Female, a yearling, was killed along Highway 51/ I-39 in Marathon County on 24 April 2004, about 6 miles northeast of the Mead Wolf Pack.

Wolf Brown County Male, a yearling, was killed along a County Road in eastern Brown County on 5 May 2004, about 53 miles southeast of the Oconto River Pack, the nearest wolf pack.

Wolf Portage County Male, a young adult or yearling, was killed on Highway 51/ I-39 in Portage County on 6 May 2004, 12 miles southeast of the Mead Pack.

Wolf Langlade County a adult of unknown sex was killed along Highway 64 east of Antigo in Langlade County on 28 May 2004. The location was about 11 miles south of the Ada Lake Pack.

Summary of Howl surveys

Howl surveys were conducted in 45 wolf packs (Table 4). About 60 to 63 pups were heard in 25 of 47 packs or a mean of 2.4-2.5 pups per pack. Observations were made of 56 to 58 pups in 17 packs or 3.3-3.4 pups per pack. Total pups detected were 96-101 pups in 34 packs, or 2.8 to 3.0 pups per pack. Wolves were heard at 42 of 399 howl stops for a success rate of 10.5%

Reported Wolf Observations

A total of 59 and 52 wolf observations were reported respectively for April-June and July-September quarters in 2004 (Table 5, Figure 2). This compares to 56 and 55 observations for the same periods in 2003, and 75 and 84 wolf observations for those periods in 2002. It appears that reports of wolf observations seem to be declining. This may be due to the wolf population stabilizing, or decline in reporting as wolves have become less novel. Wolves were reported from 33 counties with highest reporting rates for Marinette (14), Iron (11), Ashland (8), Bayfield (8), and Washburn (8) Counties.

Wolf Mortality and Health

Forty-one wolves, including 9 radio collared wolves were found dead in Wisconsin during spring and summer 2004, and a total of 66 wolves were found dead in 2004 (Table 6). A total of 16 radio collared wolves were found dead in 2004, including 13 that were being actively monitored. Among actively monitored collared wolves mortality included: mange 3 (23%), other wolves 1 (8%), illegal shooting 4 (31%), vehicle collisions 2 (15%), euthanized at depredation site 1 (8%), and capture related 2 (15%). Mortality for the overall sample of 66 wolves included the following: 6 (9%) mange, 1 (2%) other wolves, 8 (12%) illegal shooting, 23 (35%) vehicle collisions, 24 (36%) euthanized at depredation sites, 2 (3%) capture related, 1 (2%) accidental (head stuck in pail), and 1 (2%) unknown.

Among actively monitored wolves, 31% died from natural mortality and 69% from human causes. For the overall sample, 12% died from natural mortality, 86% died from human causes, and 2% were unknown. The overall sample is biased toward road kills and euthanized depredators, and under represents the level of wolves dying from disease, other wolves, or illegal kill.

The 24 wolves euthanized at livestock depredation sites included 16 adults, 4 yearlings, and 4 pups. Thus 20 would likely have been present in winter 2003-2004, and would represent 5.4% of the winter population of wolves in the state. This rate of removal is not likely to have any negative impact on the population.

Mange was detected in 8 (29%) of 28 wolves examined, but was much more prevalent in Central Forest wolves (4 of 5 wolves), than in Northern Wisconsin (4 of 23 wolves). This condition continues to be fairly severe in central Wisconsin, but more scattered in northern Wisconsin. Blood samples are being examined on many of the captured wolves.

The 8 illegal wolf shootings in Wisconsin in 2004, representing 12% of all dead wolves found, and was similar to 2003 when 9 wolves were found illegally shot (17% of dead wolves). Illegal kill appeared higher in 2002 when 16 illegally shot wolves were found (27% of dead wolves), and 2001 when 7 illegal kills were found (26% of dead wolves). It does not appear that illegal kill has increased with the federal reclassification of wolves that occurred in 2003, when wolves were downlisted from endangered to threatened.

Wolf Depredation

Thirty-five cases of wolf depredation on domestic animals were recorded in 2004, and 28 of those cases occurred during the spring and summer study period for April–September (Table 7). Total depredations included 27 cattle killed, 5 sheep killed, 6 deer killed (deer farm), 15 dogs killed, and 3 dogs injured; in addition at least 6 cattle were reported as missing. At least 11-13 packs caused depredation on livestock, 6-7 depredated on dogs, and 1 pack depredated on both dogs and livestock (Lake Nabagamom). Nine of the dogs killed (60%) involved 5 attacks by the Shanagolden Pack; all involved bear hunting dogs in training and hunting situations. Overall, 15-16% of known packs in the state depredated on domestic animals, and 10% depredated on livestock. A total of 22 deer and livestock farms in 13 counties had wolf depredation in 2004, compared to 14 farms in 2003, and 8 farms in 2002.

A total of 34 wolf complaints reported to USDA-Wildlife Services occurred in 2004 in which management actions were taken (Table 8). Complaints where controls were conducted included 14 farms with first-time wolf depredations, 5 chronic farms with depredation, 2 chronic farms with wolf threats, 1 deer farm with depredation, 1 farm with injury to livestock not confirmed as caused by wolves, 5 farms with wolf threats, and 6 situations where human safety concerns occurred (bold wolves or wolf dog hybrids). Non lethal controls were used on 8 farms and 5 residences, and trapping was used at 22 sites. A total of 27 wolves were trapped from 12 farms, and 24 were euthanized (three pups captured prior to August 1 were released at the sites). Lethal control was only used on farms with verified depredation in 2004, or chronic farms where packs were threatening livestock and had depredated in 2003. Distribution of wolf complaints with management actions included 22 in Zone 1 (northern Wisconsin), 2 in Zone 2 (central forest), and 10 in Zone 3 (central and western Wisconsin). A total of 134 individual complaints were received by USDA-Wildlife Services. These included 43 confirmed as wolf (32%), 12 probable wolf (9%), 2 verified wolf threat (1%), 28 confirmed non-wolf (21%, includes 1 stillborn, 1 birthing complication, 2-3 dogs, 23-24 coyotes), and 49 unconfirmed (37%).

PLANS FOR NEXT STUDY PERIOD

Efforts will be made in winter to observe all radio collared packs from the air and obtain accurate counts on these packs. Snow track surveys will be used by DNR and volunteer trackers to locate all non-collared packs on the ground, and obtain accurate counts on each pack. Intense collection of public wolf observations will continue to supplement survey information and direct survey efforts. Some limited trapping with cable restraint devices will be conducted in winter to collar more wolves. Wolf depredation activity is expected to be low in winter, but likely to again be busy in the springtime.

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Note: This report is a preliminary progress report and should not be construed as a finalized publication. Some of the numbers of pack size, composition, population figures, and other information may change as more data becomes available. Persons wishing to cite figures within the report should consult with the authors.